

Public Information Meeting #1 • May 4, 2011

I-94 at Sprinkle Road Interchange Study

I-94 at Sprinkle Road Interchange Study
Kalamazoo, Michigan

Welcome!



Maple Grove Cemetery
Cork Street
Sprinkle Road

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Kalamazoo, Michigan

The Michigan Department of Transportation (MDOT) is studying various alternatives at the I-94 Sprinkle Road Interchange. This interchange currently has multilane ramp movements with unique geometry, growing traffic volumes, and an aging infrastructure. MDOT's goal is to investigate interchange improvements and develop concepts that best fit the community's needs.


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Maple Grove Cemetery
Cork Street
Sprinkle Road

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Purpose of Project

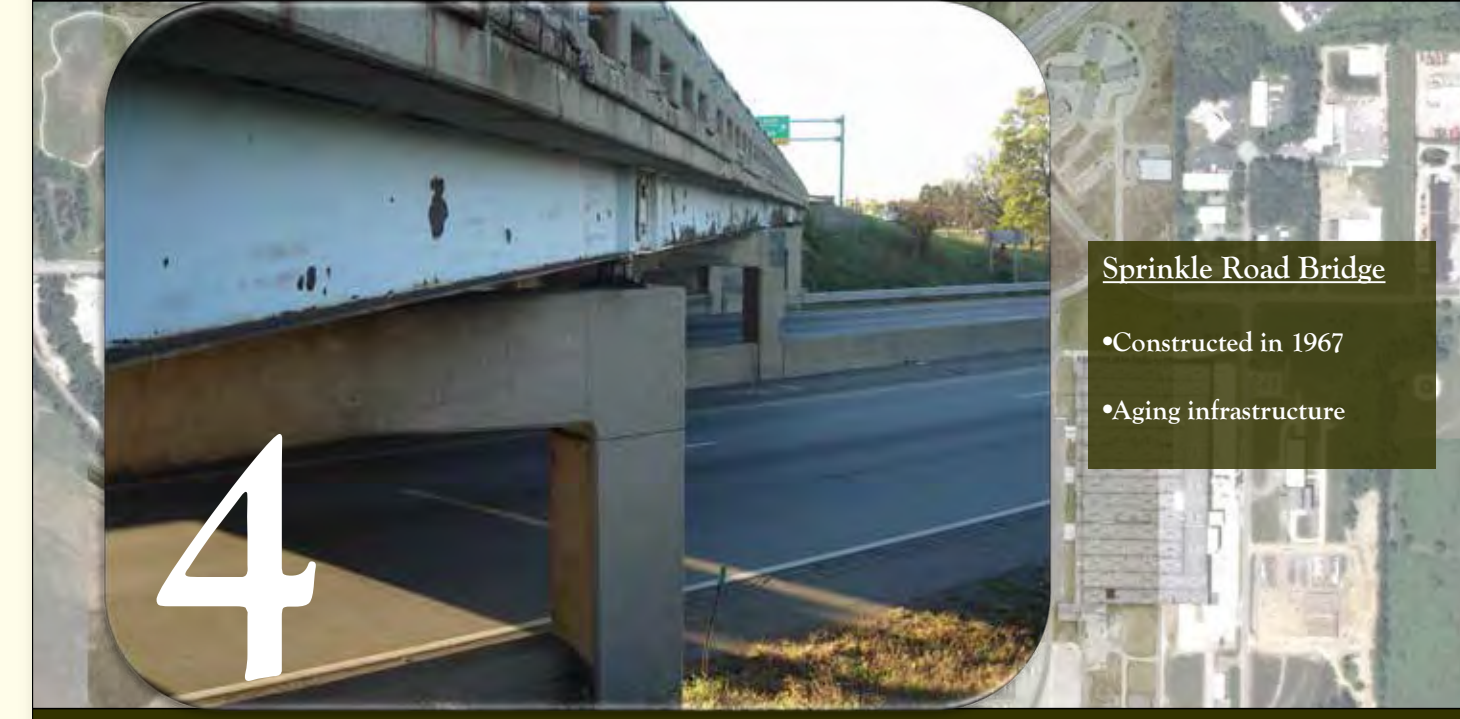


Construct the project within footprint constraints
Upgrade infrastructure
Improve traffic flow at ramps and interchanges
Improve sight distance

Maple Grove Cemetery
Cork Street
Sprinkle Road

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Purpose of Project



Sprinkle Road Bridge
•Constructed in 1967
•Aging infrastructure

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Purpose of Project



Cork Street Bridge
•Constructed in 1967
•Aging infrastructure

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Purpose of Project

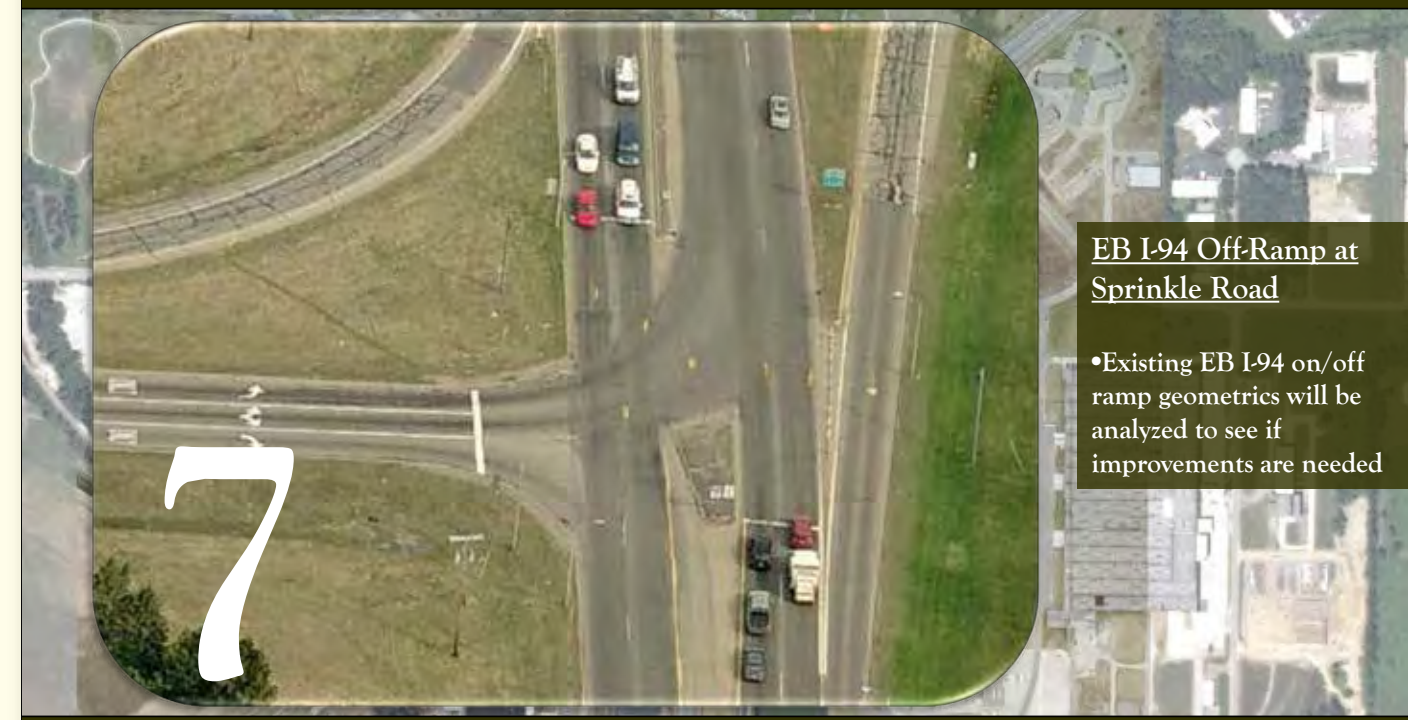


Sprinkle Road and Cork Street Intersection
•Signalized intersection will be analyzed to see if improvements are needed

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Purpose of Project



EB I-94 Off-Ramp at Sprinkle Road
•Existing EB I-94 on/off ramp geometries will be analyzed to see if improvements are needed

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Purpose of Project



Sprinkle Road looking north at the overpass
•Sight distance will be evaluated to see if improvements can be made

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Purpose of Project



Sprinkle Road looking south toward Cork Street
•Sight distance will be evaluated to see if improvements can be made

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Road Safety Audit

What is an RSA?
•A formal, safety performance examination of an existing or future road or intersection by an independent, multi-disciplinary RSA team.


Purpose of an RSA
•To identify what elements of the road may present a safety issue
•To identify what opportunities exist to eliminate or mitigate issues

Performed April 13th - 14th, 2011



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Level of Service (LOS)



LOS A
•Free Flow Operation
•Complexity unimpeded in the ability to maneuver

LOS B
•Reasonable Free Flow
•Slightly restricted ability to maneuver

LOS C
•Speed at or near Free Flow
•Minor incidents cause deterioration in service

LOS D
•Speed declines and density increases
•Little space to absorb incidents

LOS E
•Operations are volatile
•Lane changes and merging disrupt traffic stream

LOS F
•Vehicle slow in flow
•Vehicle demand is greater than capacity

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Potential Design Concepts

PARTIAL CLOVERLEAF INTERCHANGE (PARCLO)



Advantages
•Allows free flow access to I-94 from Sprinkle Rd
•Smaller footprint than a full cloverleaf with minimal delay to Sprinkle Rd from I-94
•Operates at a higher capacity than a conventional tight diamond interchange


Disadvantages
•Longer travel distances for left turns from Sprinkle Rd to I-94
•Major signals to handle through traffic on the overpass
•No free flowing access to Sprinkle Rd from I-94

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Potential Design Concepts

ROUNDBOUT DIAMOND INTERCHANGE



Advantages
•Ability to have tight exit/entrance ramps which will reduce ROW impacts
•Reduces the severity of crashes
•Reduces delay especially when there are high left turning movements


Disadvantages
•Adjacent signalized intersections can have a negative effect on the flow of the roundabout
•Pedestrian crossings can be areas of concern at roundabouts

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Potential Design Concepts

SINGLE POINT URBAN INTERCHANGE (SPUI)



Advantages
•Paths of vehicles making opposing left turns do not intersect
•Right turn movements are typically free flow
•Operate at a higher capacity than a conventional tight diamond interchange

Disadvantages
•High construction cost associated with bridges
•Longer delays for left turning movements leads to longer delays for the traffic

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Potential Design Concepts

DIVERGING DIAMOND INTERCHANGE (DDI)



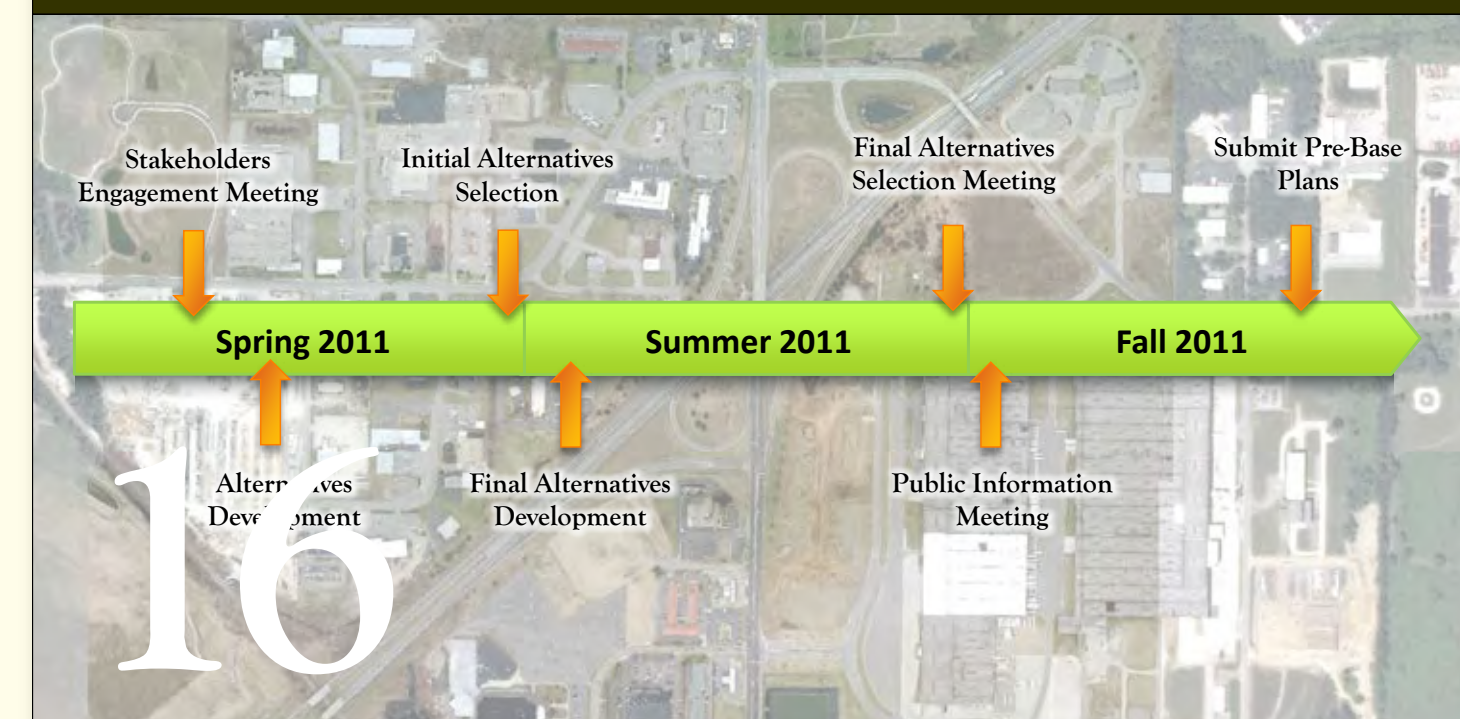
Advantages
•Provides for two phase signals with short cycle lengths, significantly reducing delay
•Increases capacity of turning movements to and from ramps
•Advantageous for interchanges with large left turning movements

Disadvantages
•Driver unfamiliarity due to the reversed flow of traffic
•Not ideal for roadways with a high number of through movements
•Trucks will have to cross free-flowing traffic in traffic lanes which could be mitigated by signaling all movements with a red light, impacting the two-phase nature of the interchange's signals

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Proposed Schedule



Stakeholders Engagement Meeting
Initial Alternatives Selection
Final Alternatives Selection Meeting
Submit Pre-Base Plans

Spring 2011
Summer 2011
Fall 2011

Alternatives Development
Final Alternatives Development
Public Information Meeting

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Public Information Meeting #2 • January 24, 2012

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Goals of Project



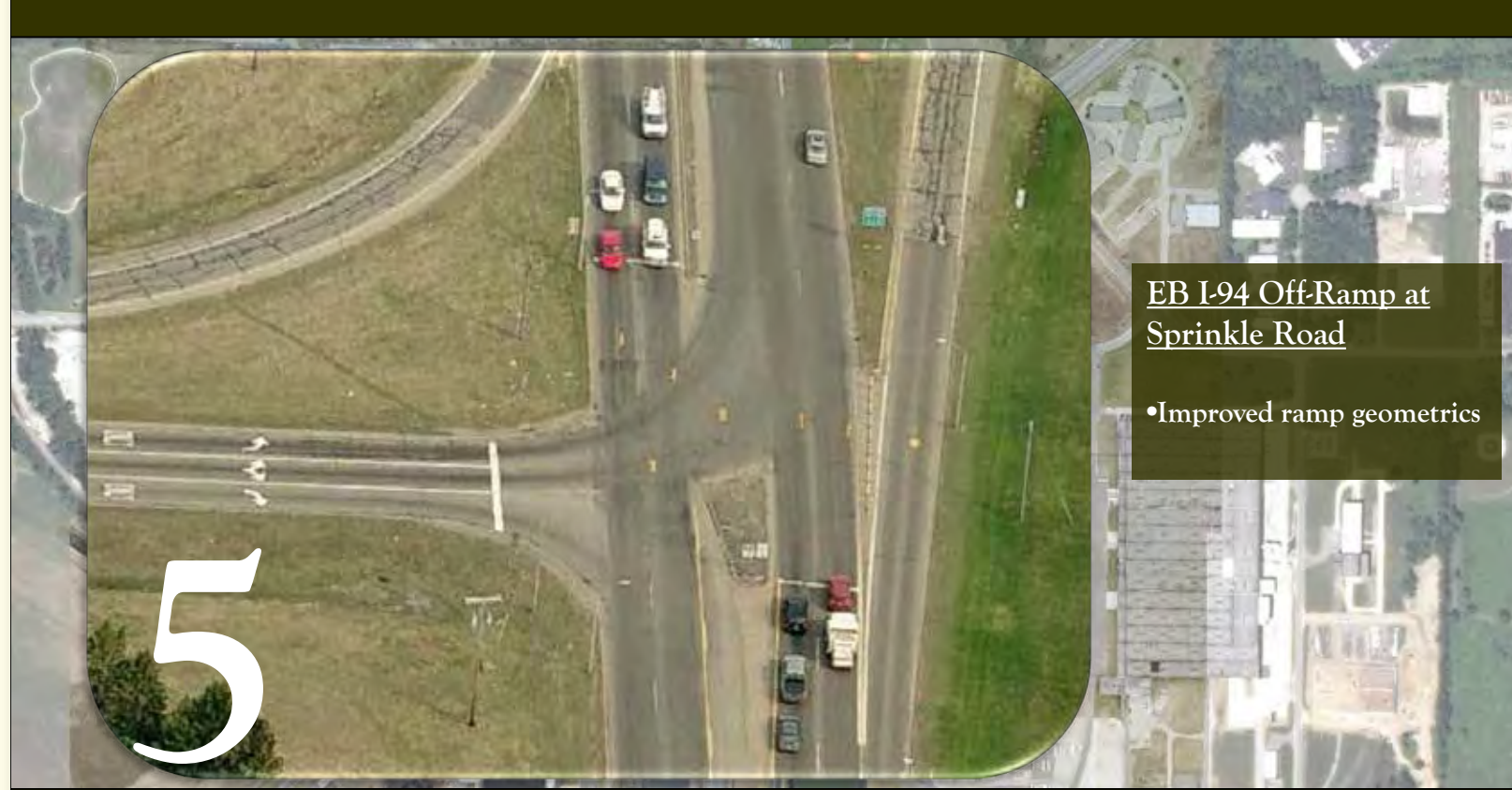
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Goals of Project



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Goals of Project



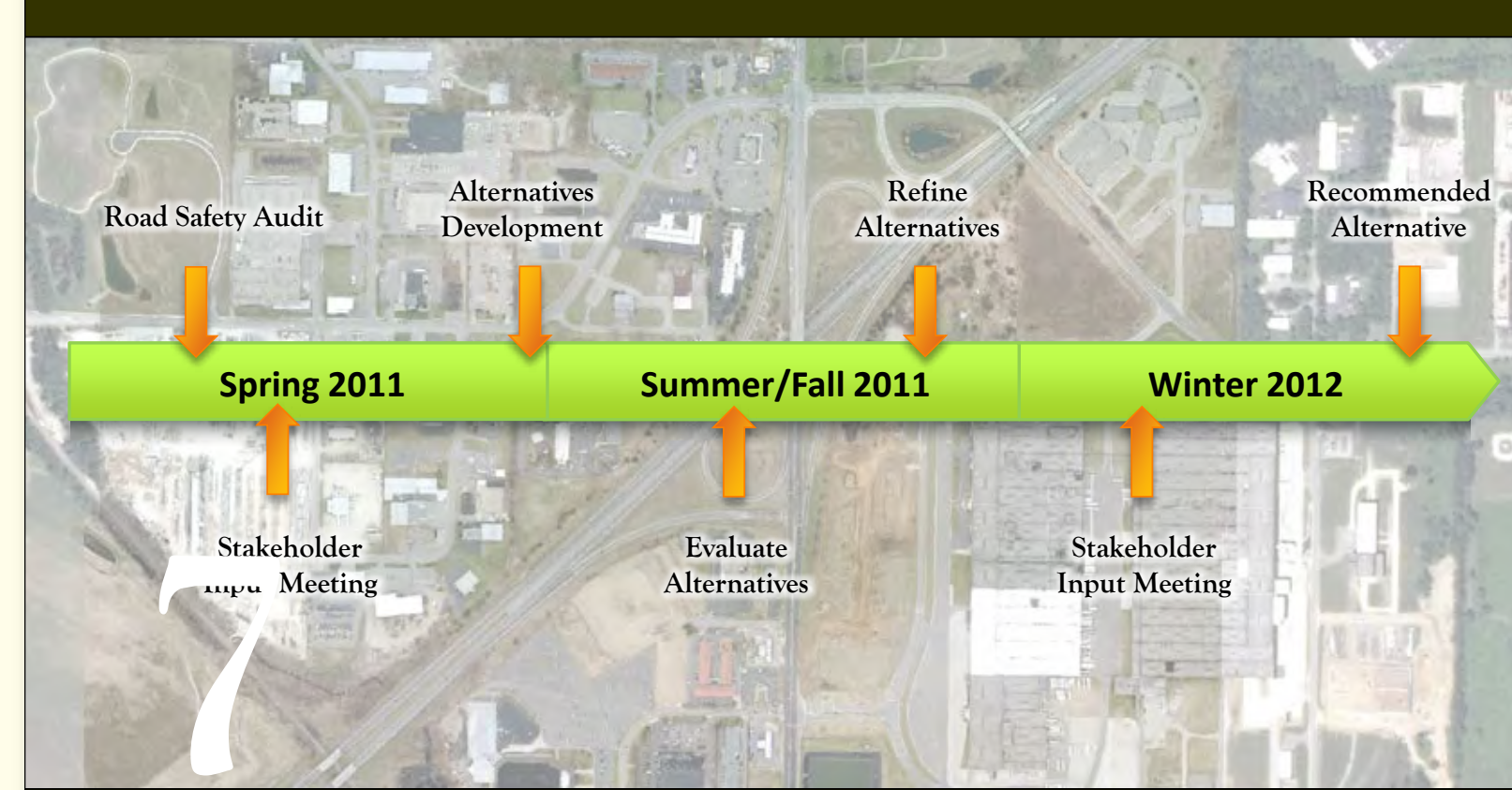
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Goals of Project



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Project Schedule



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Alternative Selection Criteria

- Cost
- Right-of-Way
- Constructability
- Level-of-Service
- Connectivity
- Social/Environmental Impacts
- Mobility
- Future Maintenance
- Geometrics




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Project Stakeholders

QUESTIONS?



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